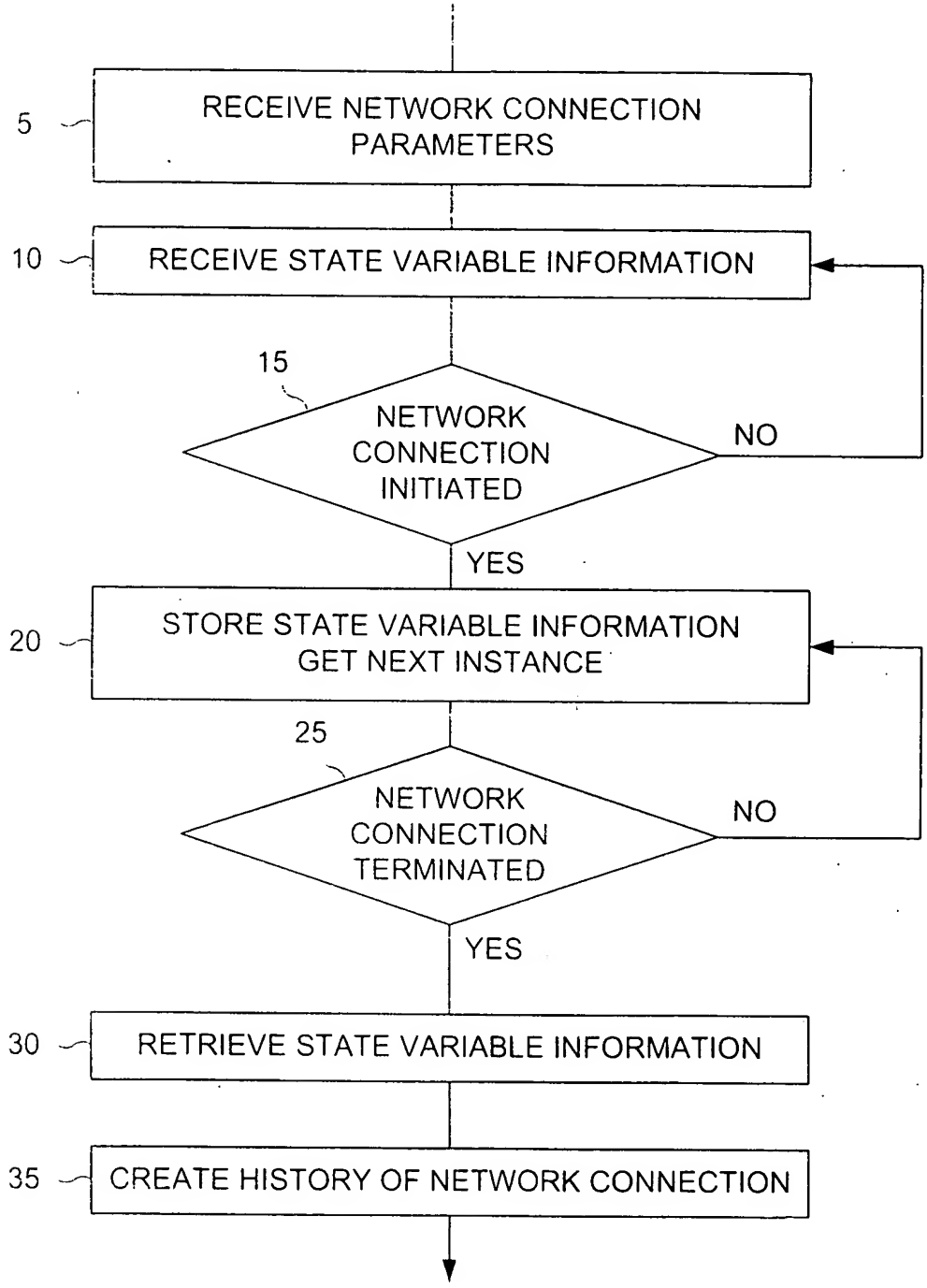
5
RECEIVE NETWORK CONNECTION PARAMETERS
10
RECEIVE STATE VARIABLE INFORMATION
15
NETWORK CONNECTION INITIATED
NO
YES
20
STORE STATE VARIABLE INFORMATION GET NEXT INSTANCE
25
NETWORK CONNECTION TERMINATED
NO
YES
30
RETRIEVE STATE VARIABLE INFORMATION
35
CREATE HISTORY OF NETWORK CONNECTION

FIG. 1

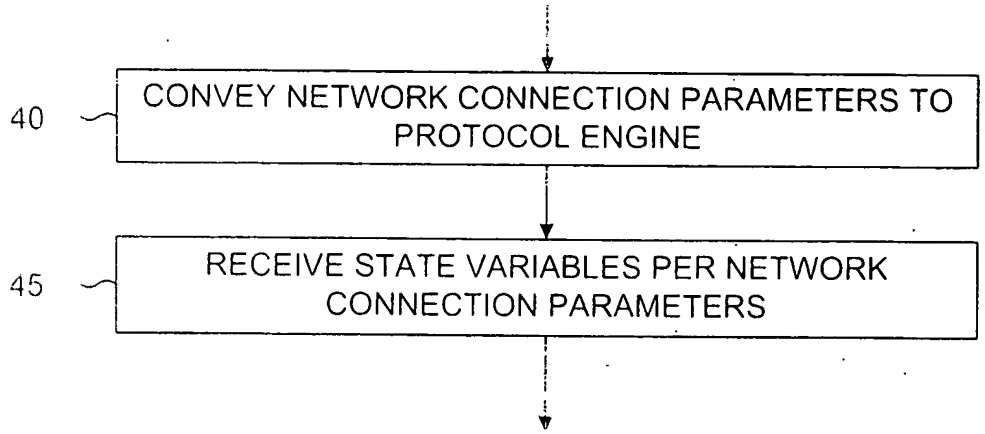


FIG. 2

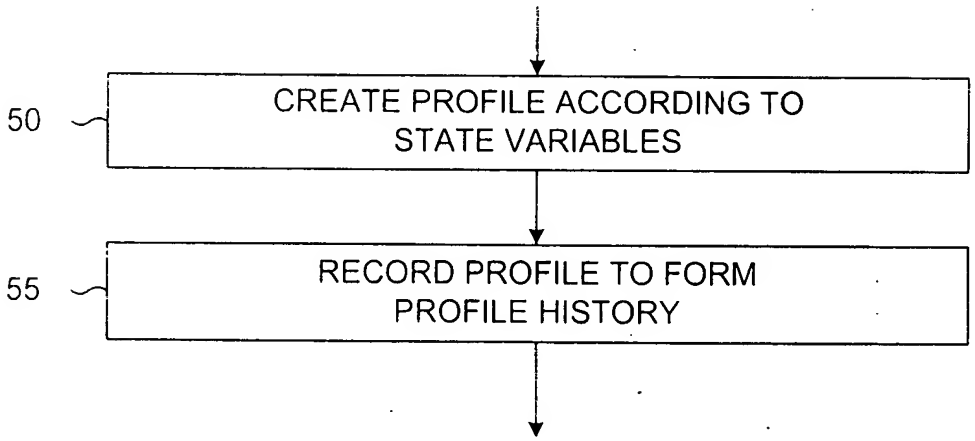


FIG. 3

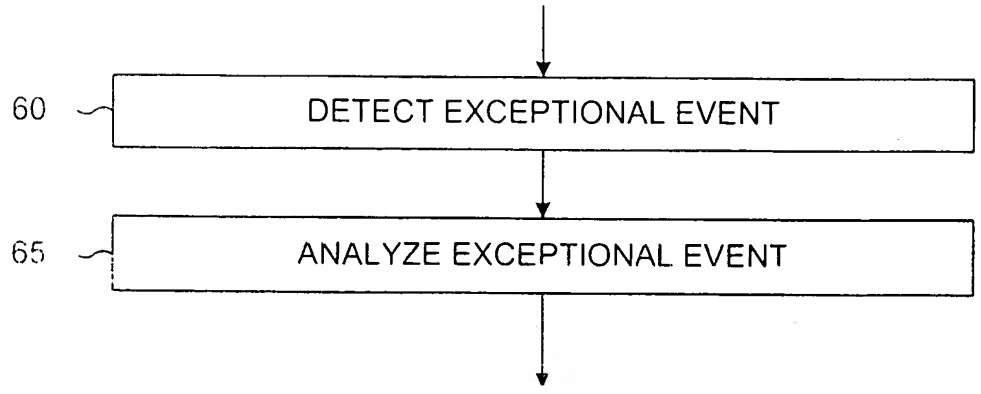


FIG. 4

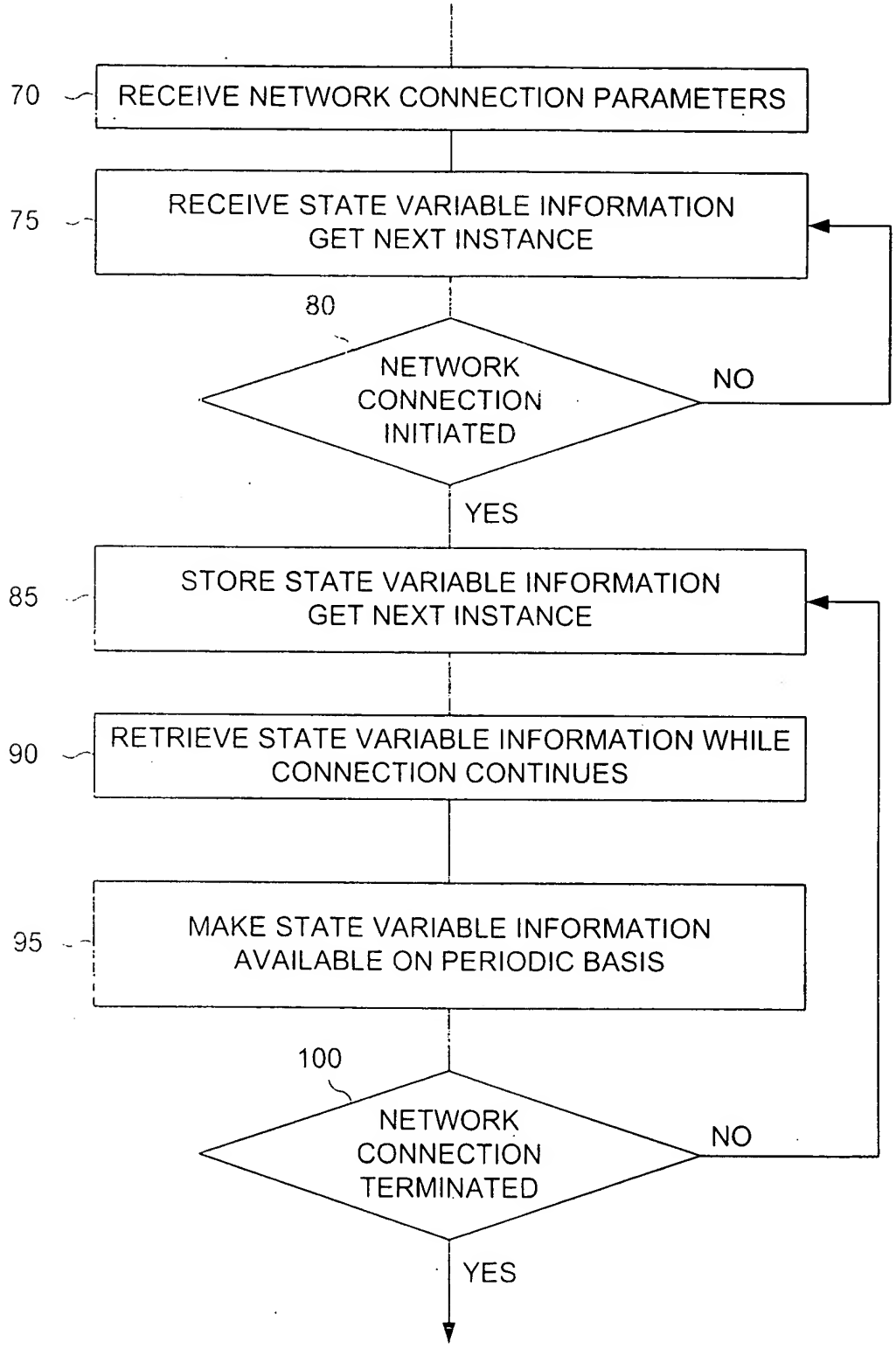
70
RECEIVE NETWORK CONNECTION PARAMETERS
75
RECEIVE STATE VARIABLE INFORMATION
GET NEXT INSTANCE
80
NETWORK CONNECTION INITIATED
NO
YES
85
STORE STATE VARIABLE INFORMATION
GET NEXT INSTANCE
90
RETRIEVE STATE VARIABLE INFORMATION WHILE CONNECTION CONTINUES
95
MAKE STATE VARIABLE INFORMATION AVAILABLE ON PERIODIC BASIS
100
NETWORK CONNECTION TERMINATED
NO
YES

FIG. 5

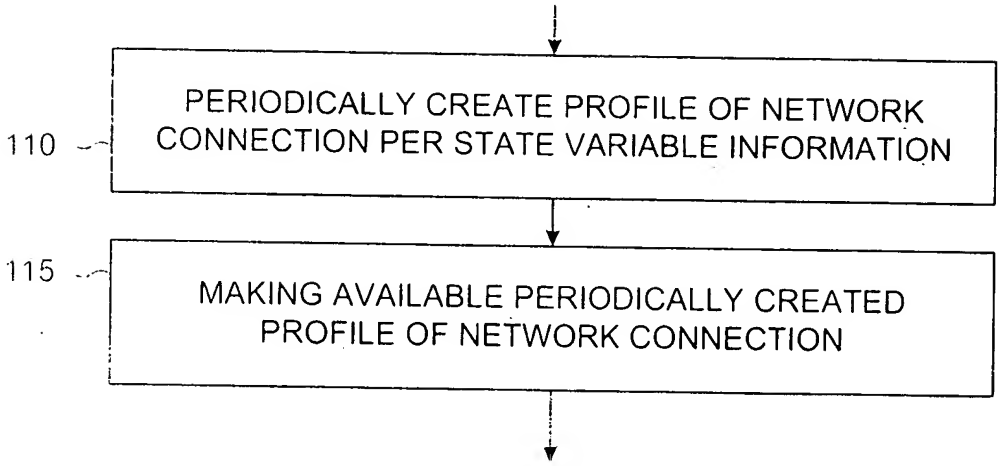
110
PERIODICALLY CREATE PROFILE OF NETWORK CONNECTION PER STATE VARIABLE INFORMATION
115
MAKING AVAILABLE PERIODICALLY CREATED PROFILE OF NETWORK CONNECTION

FIG. 6

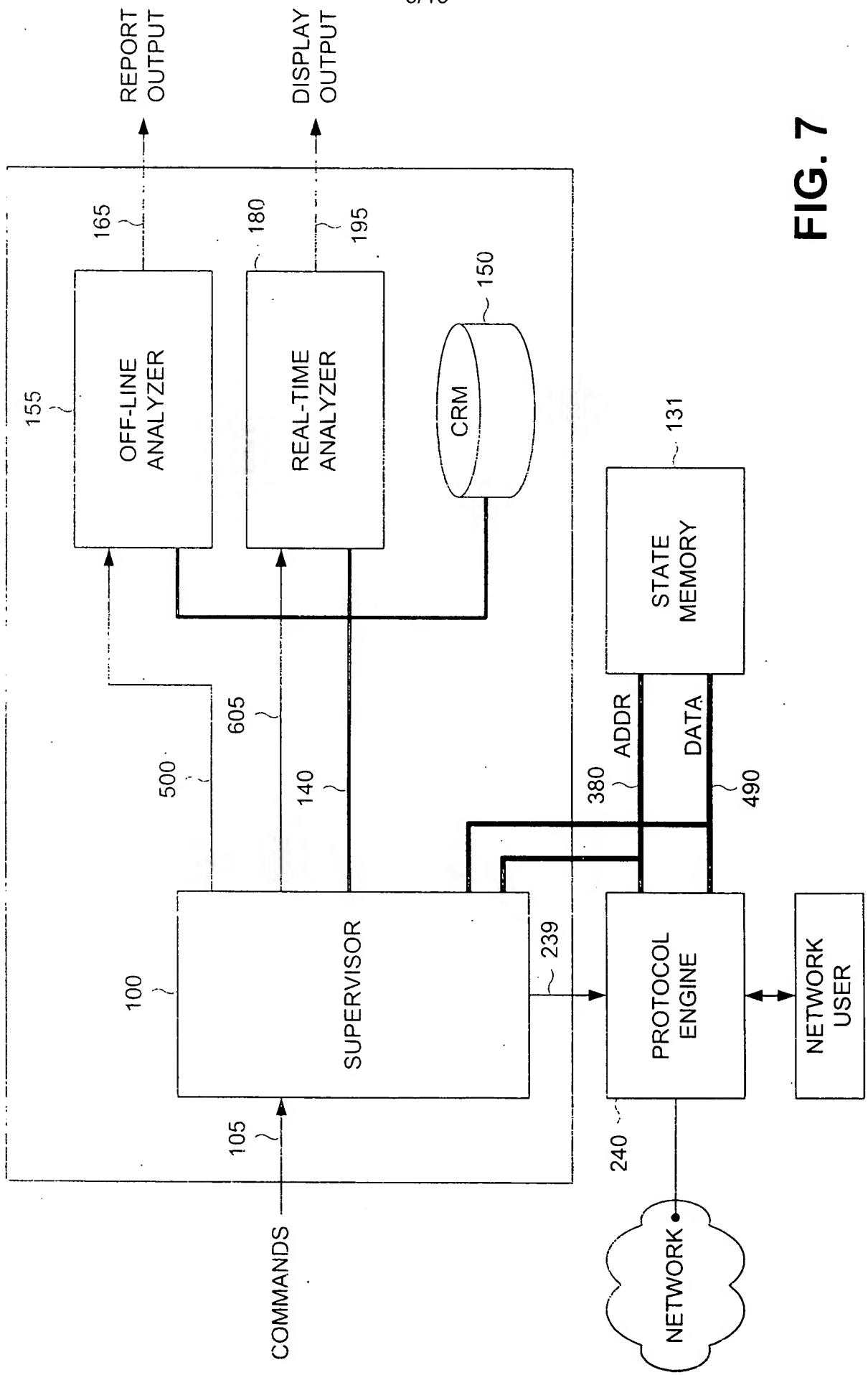
REPORT OUTPUT
DISPLAY OUTPUT
165
180
195
150
155
OFF-LINE ANALYZER
REAL-TIME ANALYZER
CRM
131
STATE MEMORY
605
500
140
380
ADDR
DATA
490
100
SUPERVISOR
239
PROTOCOL ENGINE
NETWORK USER
105
240
COMMANDS
NETWORK

FIG. 7

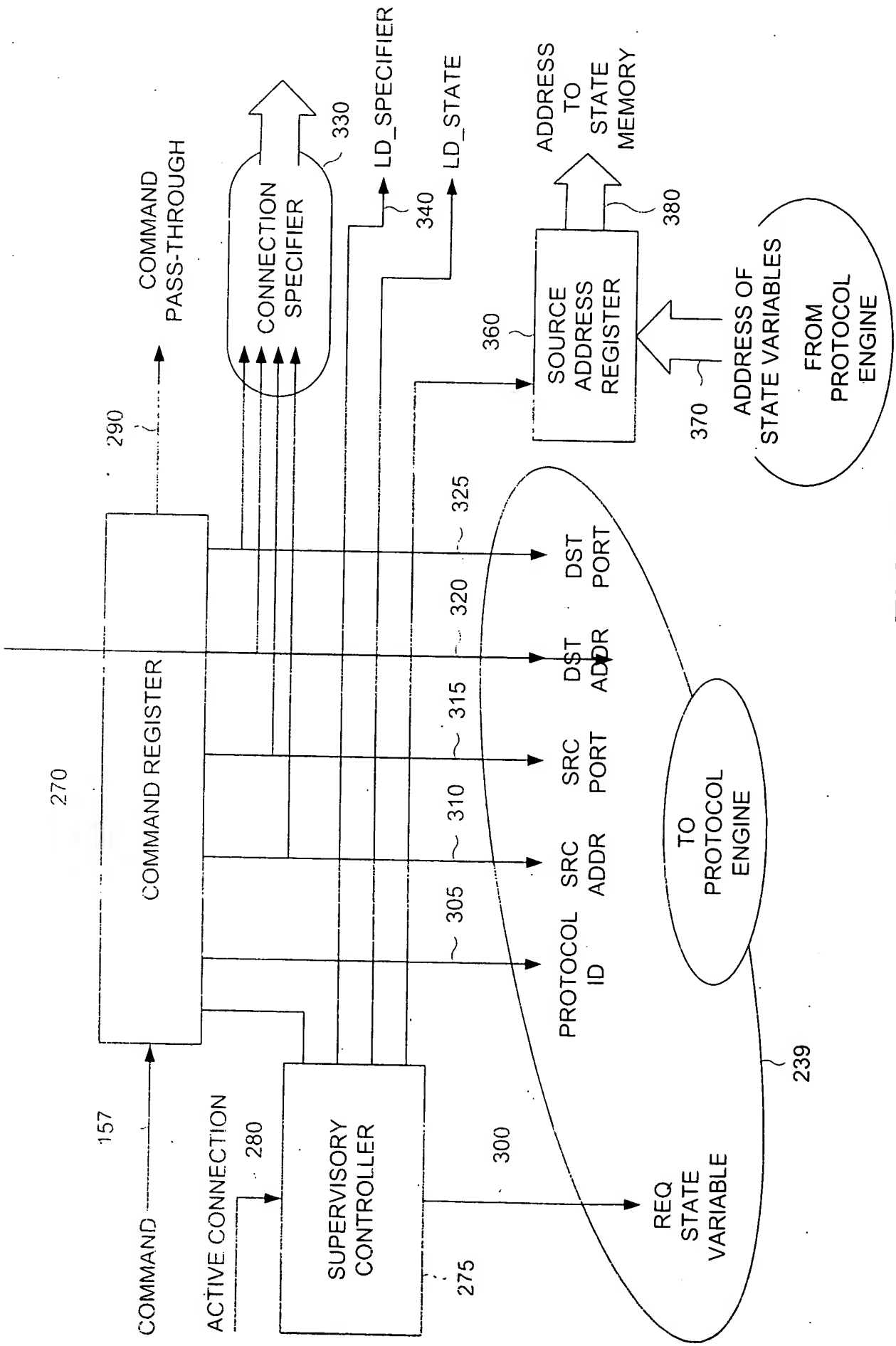
COMMAND
ACTIVE CONNECTION
157
280
SUPERVISORY CONTROLLER
275
300
REQ STATE VARIABLE
239
TO PROTOCOL ENGINE
PROTOCOL ID
SRC ADDR
SRC PORT
DST ADDR
DST PORT
305
310
315
320
325
270
COMMAND REGISTER
290
COMMAND PASS-THROUGH
CONNECTION SPECIFIER
330
LD_SPECIFIER
340
LD_STATE
360
SOURCE ADDRESS REGISTER
370
ADDRESS OF STATE VARIABLES FROM PROTOCOL ENGINE
380
ADDRESS TO STATE MEMORY

FIG. 8

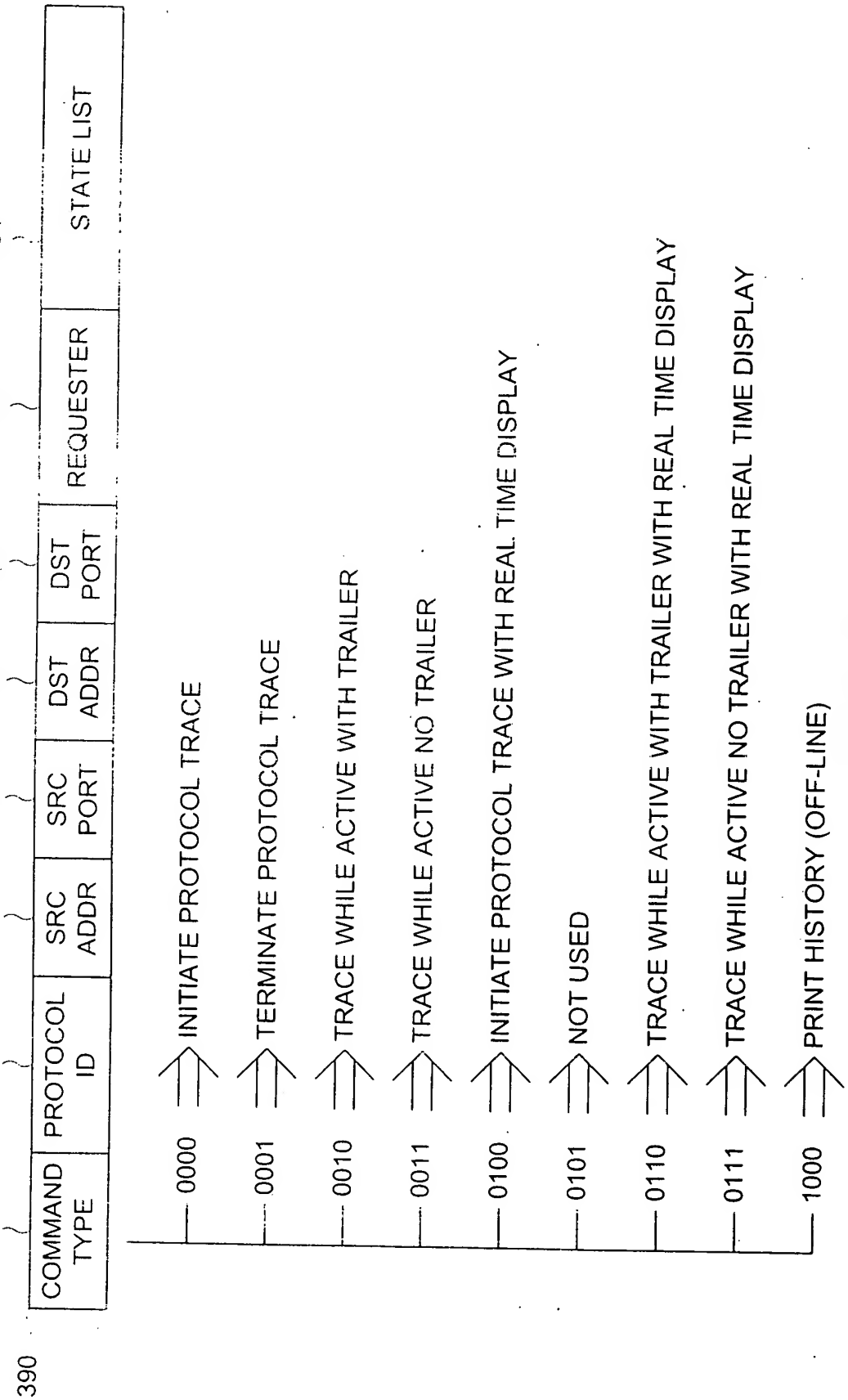
COMMAND FORMAT
390
400
COMMAND TYPE
405
PROTOCOL ID
410
SRC ADDR
420
SRC PORT
430
DST ADDR
440
DST PORT
450
REQUESTER
455
STATE LIST
0000
INITIATE PROTOCOL TRACE
0001
TERMINATE PROTOCOL TRACE
0010
TRACE WHILE ACTIVE WITH TRAILER
0011
TRACE WHILE ACTIVE NO TRAILER
0100
INITIATE PROTOCOL TRACE WITH REAL TIME DISPLAY
0101
NOT USED
0110
TRACE WHILE ACTIVE WITH TRAILER WITH REAL TIME DISPLAY
0111
TRACE WHILE ACTIVE NO TRAILER WITH REAL TIME DISPLAY
1000
PRINT HISTORY (OFF-LINE)

FIG. 9

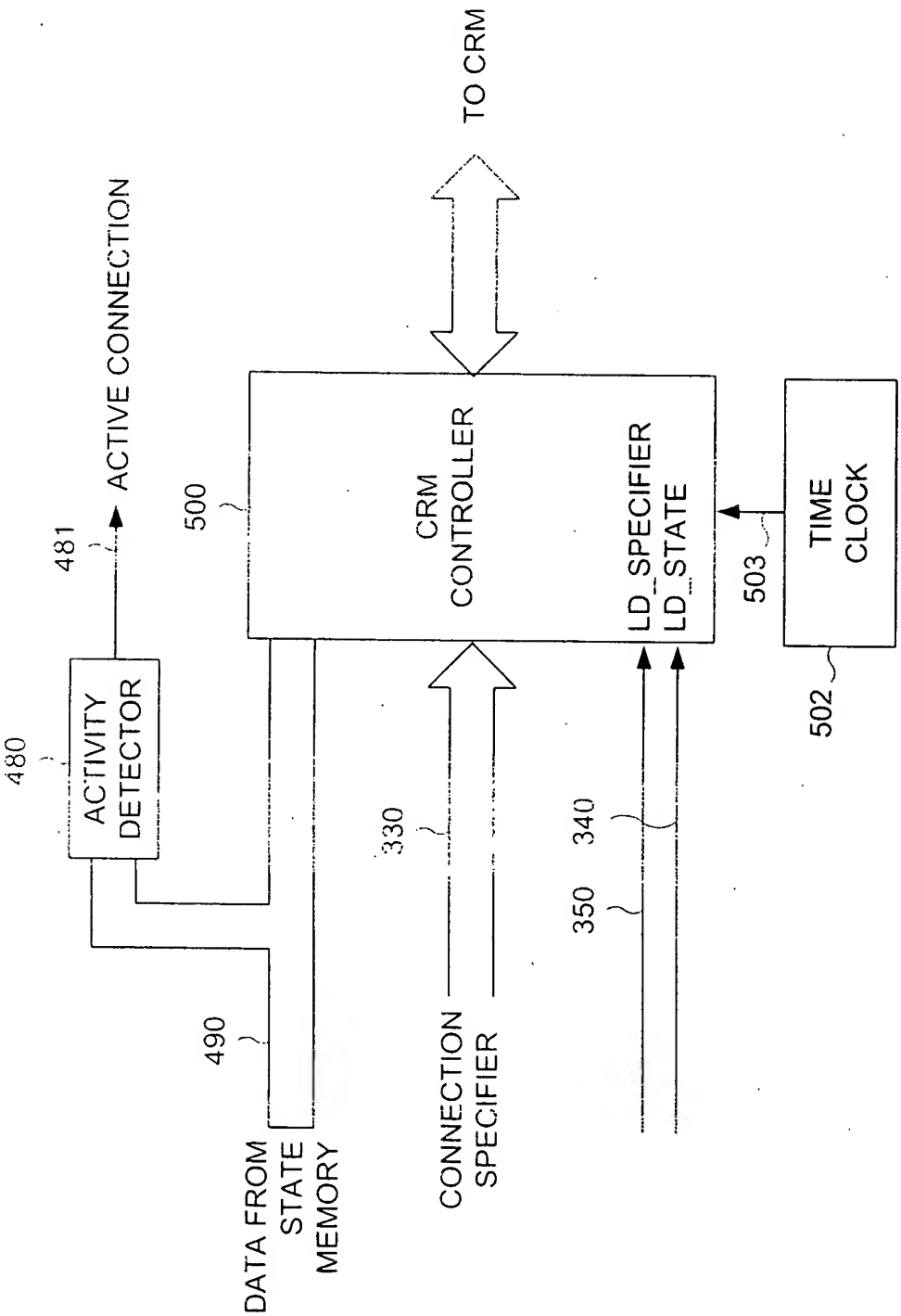
TO CRM
ACTIVE CONNECTION
481
500
CRM CONTROLLER
LD_SPECIFIER
LD_STATE
503
TIME CLOCK
502
480
ACTIVITY DETECTOR
330
340
350
490
DATA FROM STATE MEMORY
CONNECTION SPECIFIER

FIG. 10

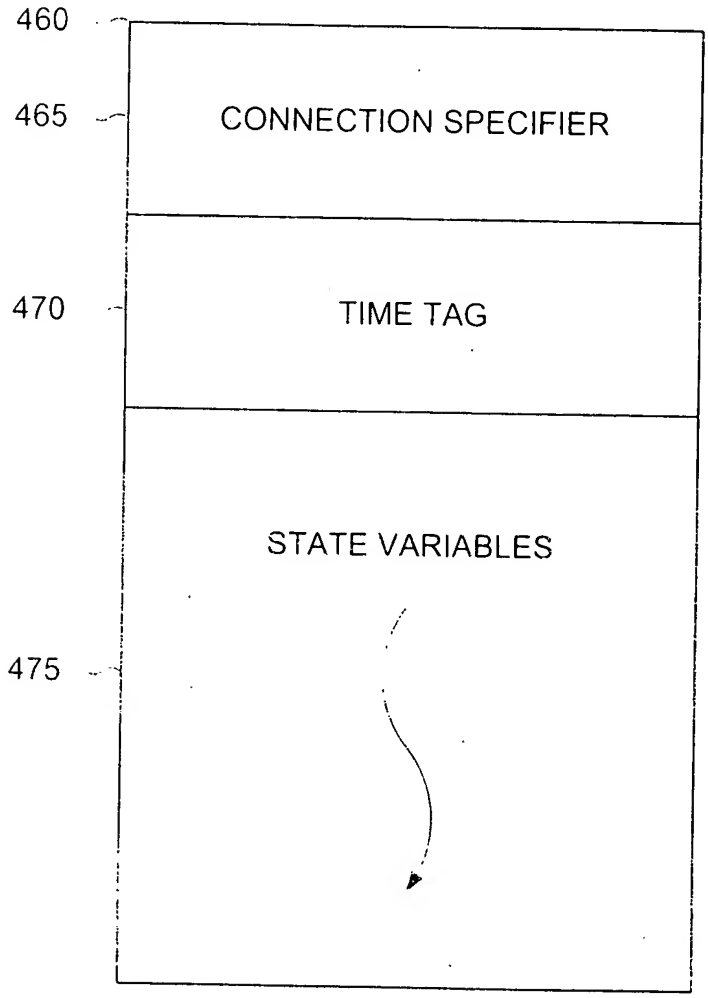
460
465
CONNECTION SPECIFIER
470
TIME TAG
STATE VARIABLES
475

FIG. 11

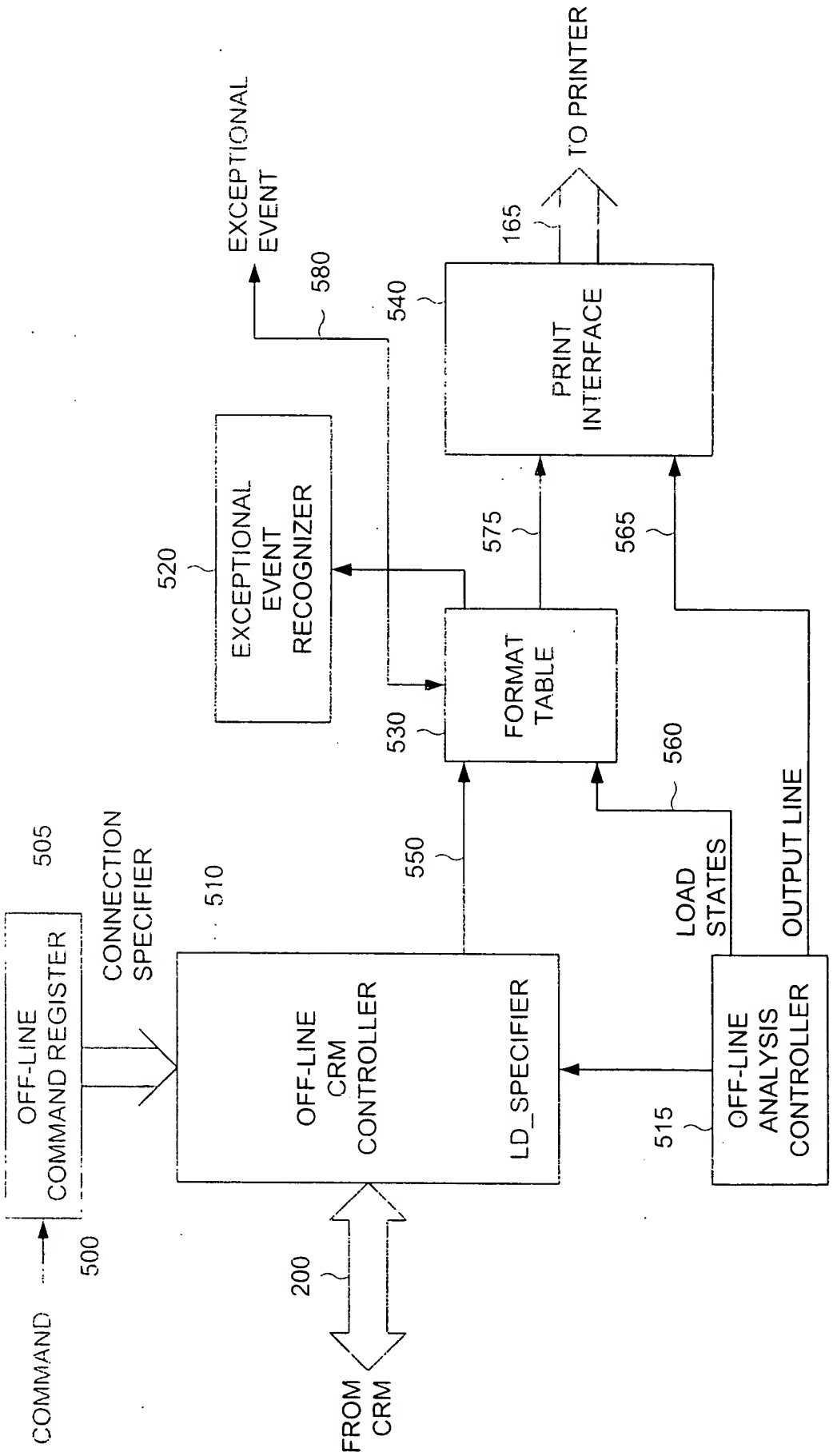
COMMAND
500
OFF-LINE COMMAND REGISTER
505
CONNECTION SPECIFIER
510
OFF-LINE CRM CONTROLLER
LD_SPECIFIER
200
FROM CRM
515
OFF-LINE ANALYSIS CONTROLLER
LOAD STATES
560
OUTPUT LINE
565
550
530
FORMAT TABLE
575
520
EXCEPTIONAL EVENT RECOGNIZER
540
PRINT INTERFACE
165
TO PRINTER
580
EXCEPTIONAL EVENT

FIG. 12

170

| | | | |
|---|---|---|---|
| REQUESTER = J. Addams | | | 225 |
| 200 INI_DATE = 3/23/03 | TRM_DATE = 3/23/03 | | 215 |
| 201 INI_TIME = 00:12:00.01 | TRM_TIME = 00:14:00.12 | | 202 |
| 205 SRC = 12.34.56.78 | SRC_PORT = 80 | | 215 |
| 210 DST = 12.34.56.78 | DST_PORT = 80 | | 220 |
| 217 EXCEPTIONAL EVENTS:<br>TIME = 3.2, CWND<br>TIME = 8.7, RTO | | | |

| TIME | SNXT | SUNA | SWND | RNXT | RACK | RWND |
|---|---|---|---|---|---|---|
| 0.1 | 0 | 0 | 6 | 0 | 0 | 6 |
| 0.2 | 1 | 0 | 5 | 2 | 0 | 5 |
| 0.3 | 3 | 0 | 3 | 5 | 0 | 1 |
| 0.4 | 6 | 0 | 0 | 6 | 1 | 1 |
| 0.5 | 6 | 0 | 0 | 7 | 1 | 0 |
| 0.6 | 6 | 0 | 0 | 7 | 5 | 4 |
| 0.7 | 7 | 5 | 4 | 1 | 5 | 3 |
| 0.8 | 7 | 5 | 4 | 3 | 5 | 1 |
| 0.9 | 0 | 5 | 2 | 4 | 0 | 2 |
| 1.0 | 2 | 1 | 5 | 5 | 2 | 3 |
| 1.1 | 4 | 3 | 5 | 6 | 4 | 4 |
| 1.2 | 6 | 5 | 5 | 7 | 6 | 5 |
| 1.3 | 7 | 6 | 5 | 0 | 6 | 4 |
| 1.4 | 1 | 6 | 3 | 3 | 6 | 2 |
| 1.5 | 3 | 6 | 2 | 5 | 0 | 1 |
| 1.6 | 5 | 6 | 0 | 7 | 3 | 2 |
| 1.7 | 5 | 6 | 0 | 2 | 5 | 2 |
| 1.8 | 5 | 6 | 0 | 5 | 7 | 1 |
| 1.9 | 5 | 4 | 5 | 0 | 5 | 4 |
| 2.0 | 7 | 4 | 3 | 4 | 5 | 0 |
| 2.1 | 0 | 5 | 3 | 4 | 7 | 2 |
| 220 | 225 | 230 | 235 | 240 | 245 | 250 |

FIG. 13

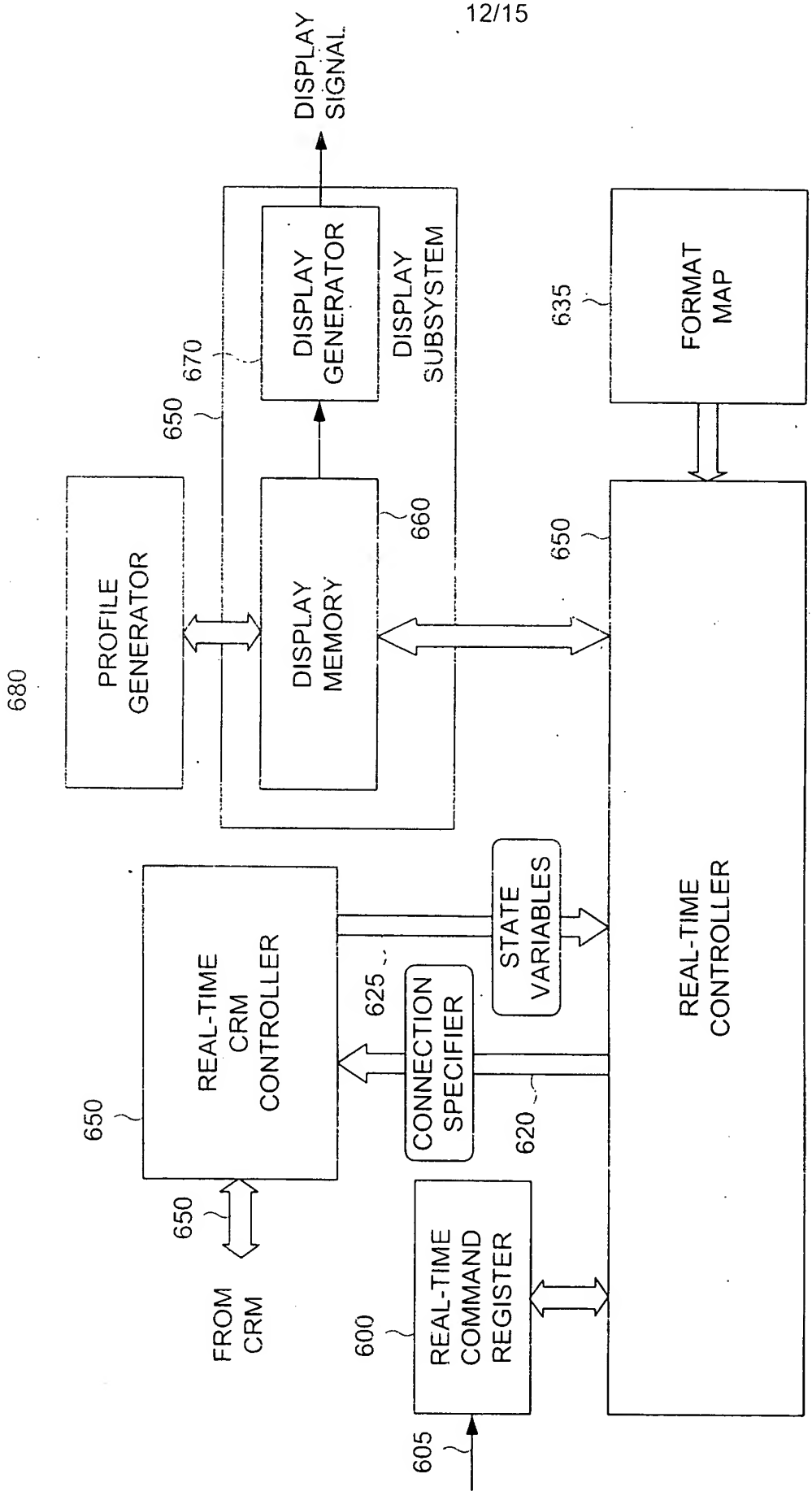
DISPLAY SIGNAL
DISPLAY GENERATOR
DISPLAY SUBSYSTEM
670
650
660
DISPLAY MEMORY
PROFILE GENERATOR
680
635
FORMAT MAP
650
REAL-TIME CONTROLLER
STATE VARIABLES
625
CONNECTION SPECIFIER
620
REAL-TIME CRM CONTROLLER
650
650
FROM CRM
600
REAL-TIME COMMAND REGISTER
605

FIG. 14

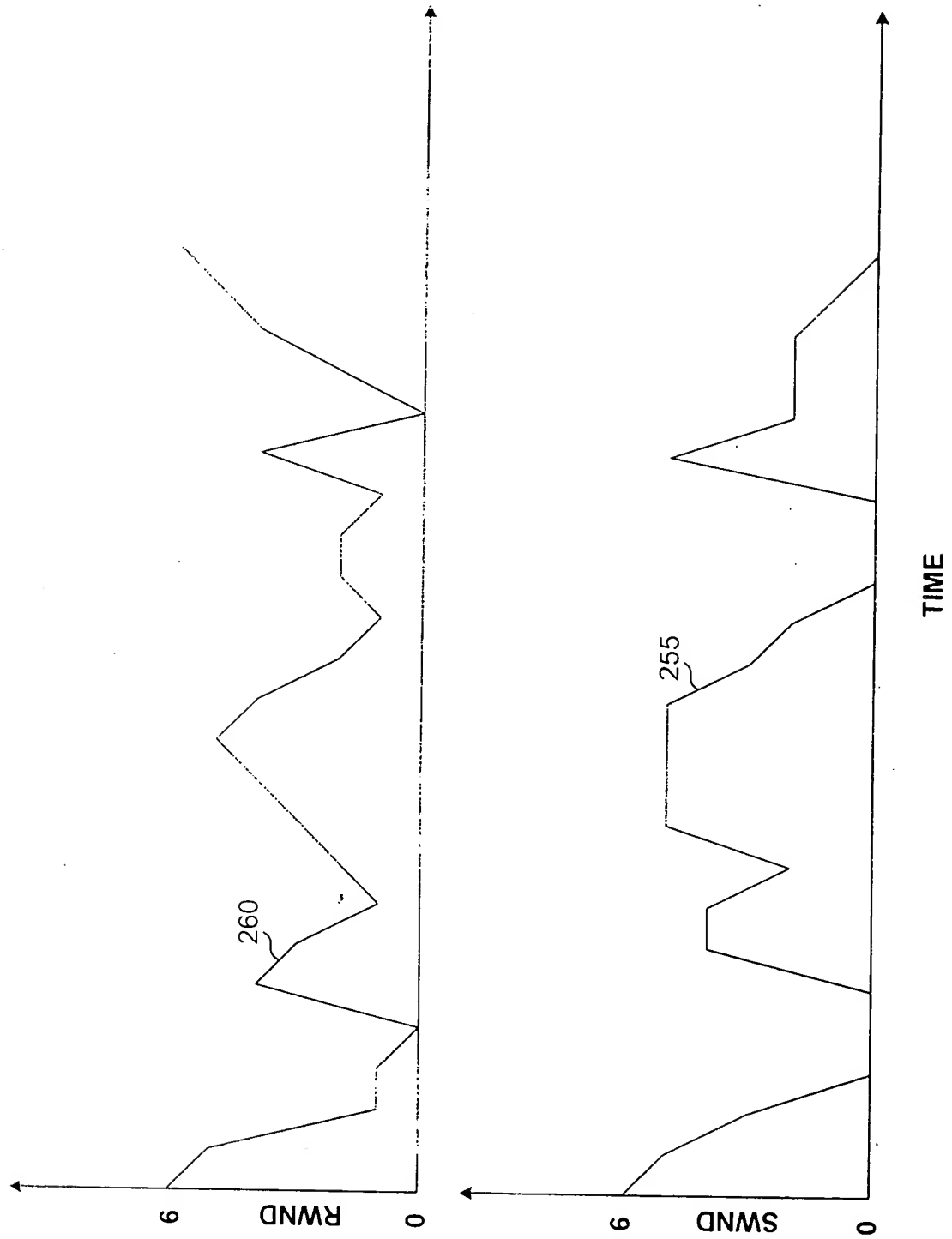


FIG. 15

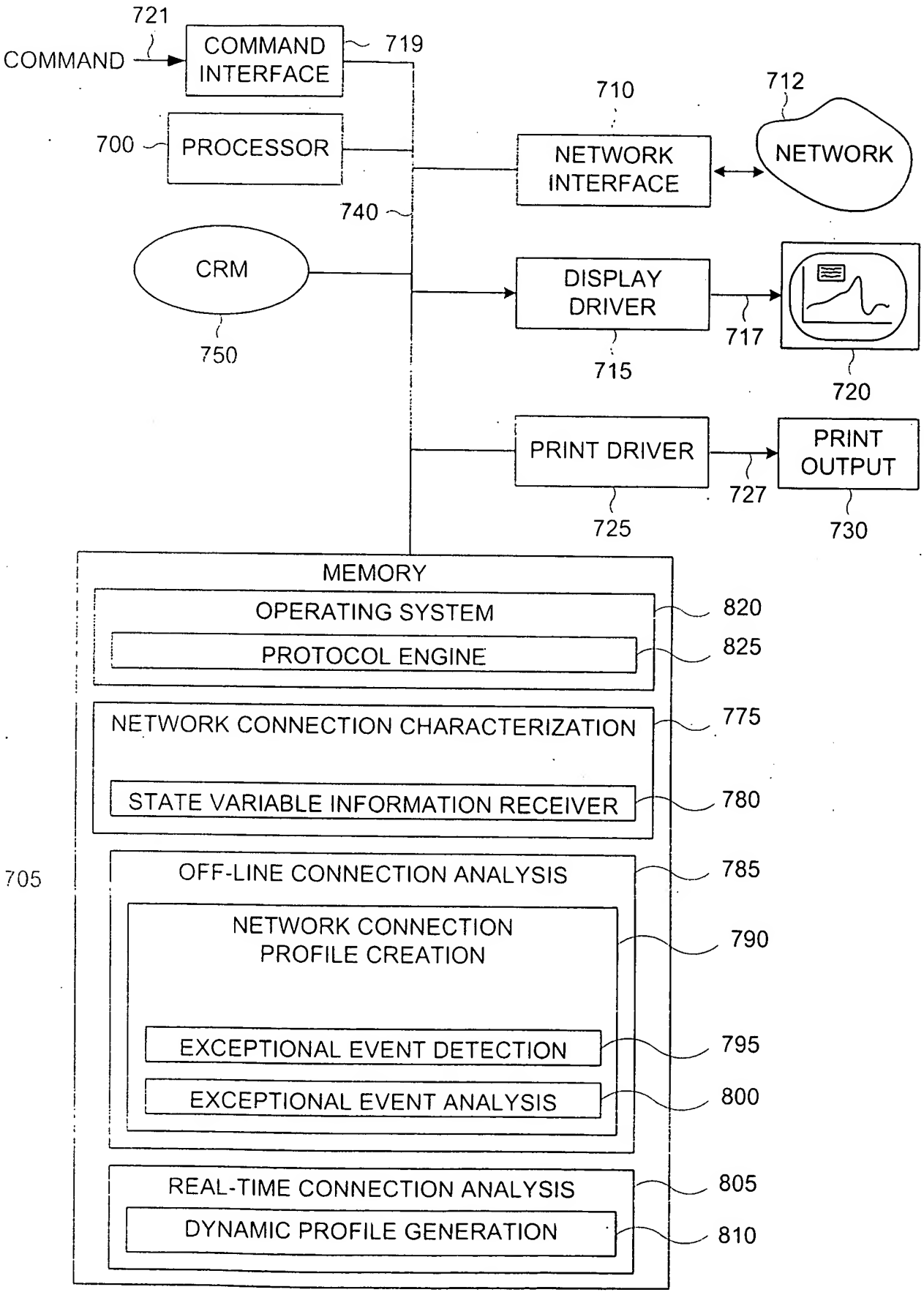
721
COMMAND
COMMAND INTERFACE
719
700
PROCESSOR
710
NETWORK INTERFACE
712
NETWORK
740
CRM
750
DISPLAY DRIVER
715
717
720
PRINT DRIVER
725
727
PRINT OUTPUT
730
MEMORY
OPERATING SYSTEM
820
PROTOCOL ENGINE
825
NETWORK CONNECTION CHARACTERIZATION
775
STATE VARIABLE INFORMATION RECEIVER
780
705
OFF-LINE CONNECTION ANALYSIS
785
NETWORK CONNECTION PROFILE CREATION
790
EXCEPTIONAL EVENT DETECTION
795
EXCEPTIONAL EVENT ANALYSIS
800
REAL-TIME CONNECTION ANALYSIS
805
DYNAMIC PROFILE GENERATION
810

FIG. 16

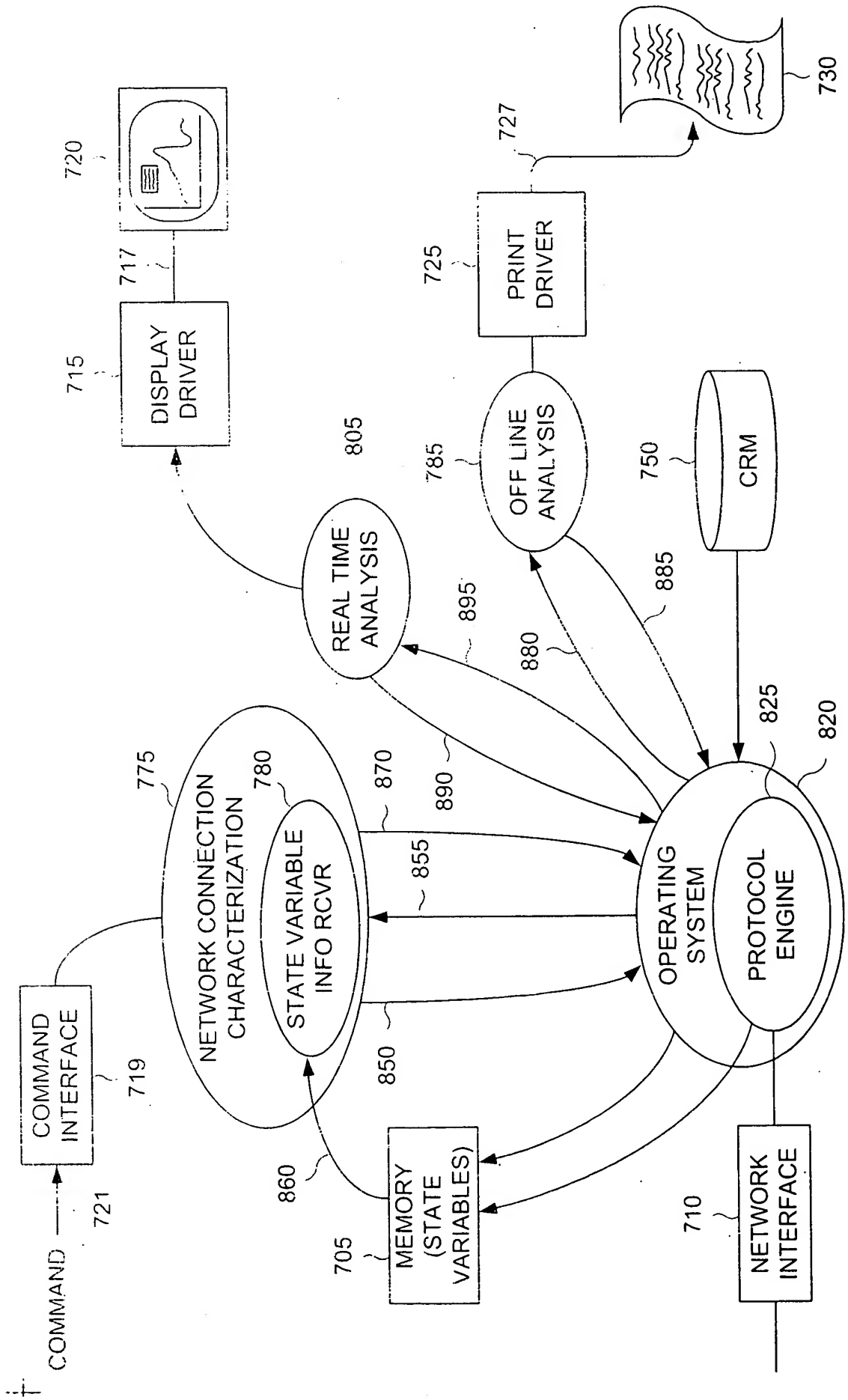
COMMAND
721
COMMAND INTERFACE
719
NETWORK CONNECTION CHARACTERIZATION
775
STATE VARIABLE INFO RCVR
780
870
855
850
860
MEMORY (STATE VARIABLES)
705
OPERATING SYSTEM
PROTOCOL ENGINE
825
820
NETWORK INTERFACE
710
890
895
880
885
REAL TIME ANALYSIS
805
OFF LINE ANALYSIS
785
CRM
750
DISPLAY DRIVER
715
717
720
PRINT DRIVER
725
727
730

FIG. 17